



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,564	06/13/2007	Seung-Hoon Lee	BGG0004US	7176
23413	7590	03/17/2010	EXAMINER	
CANTOR COLBURN, LLP			MINSKEY, JACOB T	
20 Church Street				
22nd Floor			ART UNIT	PAPER NUMBER
Hartford, CT 06103			1791	
			NOTIFICATION DATE	DELIVERY MODE
			03/17/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary	Application No.	Applicant(s)	
	10/587,564	LEE ET AL.	
	Examiner	Art Unit	
	JACOB T. MINSKEY	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 17 December 2009.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4-21 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,4-21 and 23-26 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/17/2009</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Arguments

1. The Examiner acknowledges the amendment to claims 1, 19, and 21, and the cancellation of claims 3 and 22.
2. Applicant's arguments with respect to claims 1-26 have been considered but are not found persuasive.
3. The independent claims of the instant application have been amended. The previously presented 112 2nd rejections are withdrawn based on these amendments.
4. The anticipation rejections of the claims are traversed on the main argument that the newly added limitations are not taught by the provided references. The Examiner agrees in part and disagrees in part, based on the reference utilized.
5. In regards to the 102 rejections in view of Maeda, The Examiner agrees with the Applicant that Maeda does not anticipate the limitation of treating pulp. Maeda teaches a method of treating fibers in a large variety of situations, but never explicitly refers to the treatment of pulp, only fibers. The Examiner will agree that the treatment of fibers and pulp are not inherently equivalent, but they are obvious alternatives on a case by case basis. The argument on if Maeda provides an obvious teaching to utilize the same procedure on pulp in stead of fibers has not been previously addressed. While the Examiner feels that it would be obvious to utilize pulp, the Applicant is correct that there is not anticipation by the reference.
6. The 102 rejection of the composition in view of Maeda on the other hand is not overcome by the amendment. Maeda still provides a teaching for all the current claim

limitations. Applicant argues that Maedea does not teach zeolite as a chelating agent because it lists it among chelate builders and also because it does not provide a similar structure to the rest of the chelating agents described by Maeda. The Examiner respectfully disagrees. Claim 19 does not require a specific chelating agent to be of the provided range, only that any chelating agent is provided in the given range. Zeolite is a known chelating agent to one of ordinary skill in the art. Because it is a known chelating agent, the example that provides zeolite in the claimed range anticipates claim 19. The amendment does change the scope of claim 24, which requires the chelating agent to fit a specified formula, which Applicant argues zeolite does not read on. This change of scope for the dependent claims will be addressed in the rejections in the following sections. The anticipation rejections of the composition are maintained in view of Maeda.

7. In regards to the anticipation rejections by Yamaguchi, Applicant argues the newly presented limitations to the independent claims. Applicant argues that Yamaguchi does not teach a process for treatment of a fiber material that is a pulp. In this regards, the Examiner respectfully disagrees. Column 9 lines 23-32 of Yamaguchi clearly state that composition taught is to be used in both pulp bleaching and in deinking of waste paper recycling. Applicant's argument on the concentration of the chelating agent utilized by Yamaguchi is persuasive. While the anticipation rejections of the composition claims are withdrawn, they are maintained for the process claims (claim 1) because Yamaguchi still teaches all of the limitations of claim 1 as discussed above.

8. The amendment to claim 1 does not overcome the previously presented rejection by Yamaguchi. The amendment to the claim does change the scope of all of the dependent claims by introducing a new limitation that was not taken into consideration previously. New grounds of rejection are presented due to the new combination of limitations that are now presented to the Examiner.

9. The remaining arguments are all based on the argument that the independent claim does not teach all of the limitations, and the dependent claims will inherently have the same argument. This has been addressed above. The new rejections are presented in the sections below.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

11. Claims 1, 4-6, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al, USP 5,135,677.

12. Regarding claim 1, Yamaguchi teaches a process for the treatment of a fiber material (teaches the use of a solution for pulp bleaching, column 9 lines 25-27) comprising contacting the fiber material in an aqueous medium (column 9 lines 12-22)

with a chelating agent (Yamaguchi teaches adding both a metal ion and a chelating agent with the polymer column 6 line 32 – column 7 line 18) and a polymer having the provided general formula [Polymer A = maleic acid, column 6 line 9, Polymer B = 3-allyloxy-2-hydroxypropanesulfonic acid, column 6 line 18] where the monomers are in a ratio of n (Polymer A) is 0-.95, m (Polymer B) is 0.05-.9, and k (optional component) is 0-.8, wherein $n+m+k = 1$ (ratio of A/B is 50:50 to 99.9:0.01, column 6 lines 21-31), and wherein the weight average molecular weight is between 500 and 20,000,000 g/mol (300-5000, claim 1); and wherein the fiber material is a cellulosic fiber material comprising chemical, mechanical, or chemi- mechanical pulp or a recycled fiber material (column 9 lines 23-31 teaches that the process is used on pulp bleaching and deinking waste paper).

13. Regarding claims 4-6, Yamaguchi further teaches that the fiber bleaching is preceded by a treatment with a chelating agent (example 81 teaches adding the chelating agent in the initial stages, and pre-treating pulp prior to bleaching, column 9 line 26).

14. Regarding claims 10, Yamaguchi further teaches that the fibre material comprises a recycled fibre material, and wherein the treatment further comprises de-inking the recycled fiber material in the aqueous medium comprising the chelating agent and the polymer (deinking waste paper, column 9 lines 22-32).

15. Claims 19-21, 23 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Maeda et al, USP 6,780,832.

Art Unit: 1791

16. Regarding claim 19, Maeda teaches a process for the treatment of a fiber material (column 14 line 48 – column 15 line 40) comprising contacting the fiber material in an aqueous medium with a chelating agent (Maeda teaches that the polymer can be combined with alkali agents and surfactants in fiber treatment, column 15 line 35 as well as the addition of chelating agents in column 13 line 41 and 45-51) and a polymer having the provided general formula [Polymer A = maleic acid(-based) polymers (or their salts), column 8 line 20, Polymer B = 3-allyloxy-2-hydroxypropanesulfonic acid, column 10 line 4] where the monomers are in a ratio of n (Polymer A) is 0-95, m (Polymer B) is 0.05-.9, and k (optional component) is 0-.8, wherein $n+m+k = 1$ (ratio of A/B is 30/70-90/10, column 10 line 67), and wherein the weight average molecular weight is between 500 and 20,000,000 g/mol (3,000-100,000, column 9 line 14 and 1,000-10,000 column 10 line 8); wherein the weight ratio of the polymer to the chelating agent is from 1:4 to 4:1 (Maeda teaches a range of that is .01:1-100:1, column 15 line 14, which encompasses the claimed range of 1:4 to 4:1). Additionally, Example 2 teaches the addition of 0.15 g of zeolite (a chelating agent, column 21 line 62) in a pot with 5g of a 1% aqueous polymer solution (column 21 line 64). The ratio of chelating agent to polymer solution would then be 0.03:1 and the ratio of chelating agent to just the polymer (taking the 1% dilution into consideration) would be 3:1, which reads on the claimed limitations.

17. Regarding claim 20, Maeda further teaches that the formula I n is 0.4 to 0.9, m is 0.1 to 0.5, and k is 0 to 0.5 (ratio of A/B is 90/10, column 10 line 67).

Art Unit: 1791

18. Regarding claim 21, Maeda further teaches that the weight average molecular weight of the copolymer is between 1,000 and 1,000,000 g/mol (3,000-100,000, column 9 line 14 and 1,000-10,000 column 10 line 8).

19. Regarding claim 23, Maeda further teaches that the polymer is a copolymer of 3-allyloxy-2-hydroxypropanesulfonic acid and at least one of acrylic acid, methacrylic acid, maleic acid, itaconic acid, or a salt thereof [Polymer A = maleic acid(-based) polymers (or their salts), column 8 line 20, Polymer B = 3-allyloxy-2-hydroxypropanesulfonic acid, column 10 line 4].

20. Regarding claim 25 Maeda further teaches that the treatment comprises bleaching the fibre material with an alkaline peroxide solution in the presence of the chelating agent and the polymer (column 15 line 2 and 35-40).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1791

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

23. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

24. Claims 2, 11-12, 14-18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al, USP 5,135,677 in view of Maeda et al, USP 6,780,832.

25. Yamaguchi and Maeda remain as applied above. Both references teach a method of utilizing a maleic acid based polymer and chelating agents in the bleaching process. Due to the fact that they are of the same field of endeavor (and solving the same problem of bleaching cellulose fibers/pulp) one of ordinary skill in the art at the time of the invention would have combined the two references to understand optimal and inherently properties that is not clearly stated in the other reference. One of ordinary skill in the art would have looked to both references in a proper combination of ideas.

Art Unit: 1791

26. Regarding claim 2, Maeda further teaches that the chelating agent and the polymer are introduced as a mixture or the chelating agent and the polymer are introduced separately (column 11 lines 10-13).

27. Regarding claim 11, Maeda further teaches that the formula I n is 0.4 to 0.9, m is 0.1 to 0.5, and k is 0 to 0.5 (ratio of A/B is 90/10, column 10 line 67).

28. Regarding claim 12, Maeda further teaches that the weight average molecular weight of the copolymer is between 1,000 and 1,000,000 g/mol (3,000-100,000, column 9 line 14 and 1,000-10,000 column 10 line 8).

29. Regarding claim 14, Maedea further teaches the weight ratio of the polymer to the chelating agent is from 1:4 to 4:1 (Maeda teaches a range of that is .01:1-100:1, column 15 line 14, which encompasses the claimed range of 1:4 to 4:1). Additionally, Example 2 teaches the addition of 0.15 g of zeolite (a chelating agent, column 21 line 62) in a pot with 5g of a 1% aqueous polymer solution (column 21 line 64). The ratio of chelating agent to polymer solution would then be 0.03:1 and the ratio of chelating agent to just the polymer (taking the 1% dilution into consideration) would be 3:1, which reads on the claimed limitations.

30. Regarding claim 15, Maeda further teaches that the polymer is a copolymer of 3-allyloxy-2-hydroxypropanesulfonic acid and at least one of acrylic acid, methacrylic acid, maleic acid, itaconic acid, or a salt thereof [Polymer A = maleic acid(-based) polymers (or their salts), column 8 line 20, Polymer B = 3-allyloxy-2-hydroxypropanesulfonic acid, column 10 line 4].

31. Regarding claim 16, Maeda further teaches that the chelating agent is a compound having the following general formula wherein p is 0 or an integer of 1 to 10, R._{sub.3}, R._{sub.4}, R._{sub.5}, R._{sub.6} and R._{sub.7} are independently a hydrogen atom or an alkyl chain having 1 to 6 carbon atoms and containing an active chelating ligand (represented by EDTA, column 13, line 47).

32. Regarding claims 17 and 18, Maeda teaches that any chelating agents can be utilized as long as they do not directly damage the polymers utilized (column 13 lines 37-51), but they do not provide the same specific examples as the instant claims.

33. The Applicant also admits that it is well known in the pulp and paper industry to utilize chelating agents to remove harmful components of the solution prior to bleaching with peroxide [0002]. Applicant further states that there is a large group of chelating agents that can be utilized and have been utilized in the past [0003 and 0010]. Applicant provides a group of chelating agents that can be utilized in the instant application, and also states that all three different formulas provided are of "commercially available" chelating agents [0054-0086].

34. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use one of the known chelating agents presented in the method taught by Maeda because one of ordinary skill in the art would have been able to carry out such a substitution to achieve the predictable result of removing harmful components from the solution/slurry. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR Int'l Co V. Teleflex Inc, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

35. Regarding claim 26, Yamaguchi further teaches that the fibre material comprises a recycled fibre material, and wherein the treatment further comprises de- inking the recycled fiber material in the aqueous medium comprising the chelating agent and the polymer (deinking waste paper, column 9 lines 22-32).

36. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al, USP 5,135,677.

37. Regarding claim 7, Yamaguchi remains as applied above, but is silent on the pH of the medium during treatment (but does teach that it is known in the art to keep the aqueous solution at a pH of 2-7 in order to yield the desired polymer, column 3 line 38).

38. It would have been obvious to one of ordinary skill in the art at the time of the invention to have determined the optimum values of the relevant process parameters through routine experimentation (and common knowledge of pulping procedures). In re Aller, USPQ 233, CCPA 1955.

39. Regarding claims 8-9, Yamaguchi remains as applied above, but does not provide details on the bleaching steps that occur after the initial treatment of the pulp. Maeda simply states that known bleaching methods occur. Yamaguchi does teach utilizing hydrogen peroxide as a polymerization catalyst, and it would have been obvious to select the same chemical for the peroxide bleaching in subsequent steps due to the teaching that the hydrogen peroxide will not have ill effects on the solution used in the pretreatment.

40. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to a known bleaching agent presented in the method taught by

Yamaguchi because one of ordinary skill in the art would have been able to carry out such a substitution to achieve the predictable result of bleaching the pulp to a desired level of whiteness. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” KSR Int’l Co V. Teleflex Inc, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

41. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al, USP 5,135,677, in view of Maeda et al, USP 6,780,832, and in view of Andersson et al, USP 5,658,429.

42. Yamaguchi and Maeda remain as applied above. Both references teach a method of utilizing a maleic acid based polymer and chelating agents in the bleaching process. Due to the fact that they are of the same field of endeavor (and solving the same problem of bleaching cellulose fibers/pulp) one of ordinary skill in the art at the time of the invention would have combined the two references to understand optimal and inherently properties that is not clearly stated in the other reference. One of ordinary skill in the art would have looked to both references in a proper combination of ideas.

43. Regarding claims 7 and 13, Maeda provides ratios of chelating agent to polymer as discussed above, but is silent on how much total of the mixture should be utilized in the treatment.

44. In the same field of endeavor of treating/bleaching fibers with a chelating agent, Andersson teaches that the treatment with a complexing agent (which is listed as a

chelating agent compound, column 3) at a pH of preferably 5-7 (column 2 line 33) in an amount of .5-5 kg/ton of dry pulp (column 3 line 39).

45. While Andersson does not teach the exact same polymer formula as expressed in claim 1, the teachings of how much complexing agent to add to the pulp to prepare it for bleaching is information that one of ordinary skill in the art at the time of the invention would have found useful and could have utilized the knowledge in the Maeda method for the benefit of using an optimum amount of material to accomplish the goal of treating the fibers prior to pulping for the most efficient results and use of capitol.

46. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al, USP 5,135,677, in view of Maeda et al, USP 6,780,832.

47. Regarding claim 24, Maeda further teaches that the chelating agent is a compound having the following general formula wherein p is 0 or an integer of 1 to 10, R.sub.3, R.sub.4, R.sub.5, R.sub.6 and R.sub.7 are independently a hydrogen atom or an alkyl chain having 1 to 6 carbon atoms and containing an active chelating ligand (represented by EDTA, column 13, line 47). Maeda does not teach that the EDTA is utilized in the described amount of independent claim 19. The Examples of Maeda present the use of a different chelating agent (zeolite) in the claimed range, and also teaches that EDTA can be utilized as the chelating agent. It would be a simple substitution of one known chelating agent for another to replace the zeolite with a more commonly utilized chelating agent (EDTA). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use one of the known chelating agents presented in the method taught by Maeda because one of ordinary

skill in the art would have been able to carry out such a substitution to achieve the predictable result of removing harmful components from the solution/slurry. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” KSR Int’l Co V. Teleflex Inc, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

Double Patenting

48. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

49. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

50. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

51. Claims 1-26 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 13-28, 7-8, 1-6, and 22 respectfully of copending Application No. 11/596140. Although the conflicting claims are not identical, they are not patentably distinct from each other because the

only difference in the claims is the addition of requiring an alkaline earth metal compound. These compounds are commonly known in the art (as all of the cited references above mention the use of alkaline earth metals in some manner or another) and it would have been obvious to utilize these compounds in addition to the chelating agent and the polymer.

52. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

53. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB T. MINSKEY whose telephone number is (571)270-7003. The examiner can normally be reached on Monday to Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JTM

/Eric Hug/
Primary Examiner, Art Unit 1791